National Institute of Environmental Health Sciences

Precision genetics for complex objectives in animal agriculture

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Abstract:

Indirect modification of animal genomes by interspecific hybridization, cross-breeding, and selection has produced an enormous spectrum of phenotypic diversity over more than 10,000 yr of animal domestication. Using these established technologies, the farming community has successfully increased the yield and efficiency of production in most agricultural species while utilizing land resources that are often unsuitable for other agricultural purposes. Moving forward, animal well-being and agricultural sustainability are moral and economic priorities of consumers and producers alike. Therefore, these considerations will be included in any strategy designed to meet the challenges produced by global climate change and an expanding world population. Improvements in the efficiency and precision of genetic technologies will enable a timely response to meet the multifaceted food requirements of a rapidly increasing world population.

Source: http://dx.doi.org/10.2527/jas.2010-2847

Resource Description

Communication: ☑

resource focus on research or methods on how to communicate or frame issues on climate change; surveys of attitudes, knowledge, beliefs about climate change

A focus of content

Communication Audience: ☑

audience to whom the resource is directed

Researcher

Exposure : ☑

weather or climate related pathway by which climate change affects health

Food/Water Security

Food/Water Security: Livestock Productivity

Geographic Feature: ☑

resource focuses on specific type of geography

None or Unspecified

Geographic Location:

resource focuses on specific location

Global or Unspecified

Health Co-Benefit/Co–Harm (Adaption/Mitigation):

specification of beneficial or harmful impacts to health resulting from efforts to reduce or cope with greenhouse gases

A focus of content

Health Impact:

specification of health effect or disease related to climate change exposure

Health Outcome Unspecified

Intervention:

strategy to prepare for or reduce the impact of climate change on health

A focus of content

Mitigation/Adaptation:

mitigation or adaptation strategy is a focus of resource

Adaptation

Resource Type:

format or standard characteristic of resource

Review

Resilience:

capacity of an individual, community, or institution to dynamically and effectively respond or adapt to shifting climate impact circumstances while continuing to function

A focus of content

Timescale:

time period studied

Time Scale Unspecified